

DESCRIPTION

The PM100 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 100 watts of continuous output power at convection cooling. They are suited for medical, information technology and industrial applications, but not for life-supporting medical equipment. Approval to both EN60601-1 and EN60950-1 safety standards improves design-in time and reduces end equipment compliance costs.

FEATURES

- Medical and ITE approvals
- Compact size 2" x 4" x 1.26"
- High power density 10 W/cubic inch
- 100 W output with convection cooling up to +50°C
- Low earth leakage current
- EN55011 /55022 class B emissions
- RoHS compliant

INPUT SPECIFICATIONS

Input voltage:	90-132 /180-264 VAC (Universal mains supply operation)
Input frequency:	47-63 Hz
Input current:	1.9 A (rms) for 100-120 VAC 1.1 A (rms) for 200-240 VAC
Earth leakage current:	150 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	100 watts maximum
Ripple and noise:	150 mV peak to peak on 5.0 V model, 1% peak to peak on other models
Overvoltage protection:	Provided on output; set at 110-140% of its nominal output voltage
Overcurrent protection:	All outputs protected to short circuit conditions
Temperature coefficient:	All outputs ±0.04% /°C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-10°C to +70°C
Storage temperature:	-40°C to +85°C
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50°C linearly to 50% at +70°C
Cooling:	Convection

PM100 SERIES



CE (LVD)
RoHS

SAFETY STANDARD APPROVALS



UL 60601-1, CSA C22.2 No. 601.1
File No. E178020



TÜV EN 60601-1



UL 60950-1, CSA C22.2 No. 60950-1



TÜV EN 60950-1

GENERAL SPECIFICATIONS

Switching frequency:	100 KHz (typical)
Efficiency:	88-90% @ 230 VAC full load
Hold-up time:	12 ms minimum at 110 VAC
Line regulation:	±0.2% maximum at full load
Inrush current:	40 A @ 115 VAC or 80 A @ 230 VAC, at 25°C cold start
Withstand voltage:	4000 VAC from input to output, 1500 VAC from input to ground, 500 VAC from output to ground
MTBF:	270,000 hours at full load at 25°C ambient temperature, calculated per MIL-HDBK-217F

EMC Performance

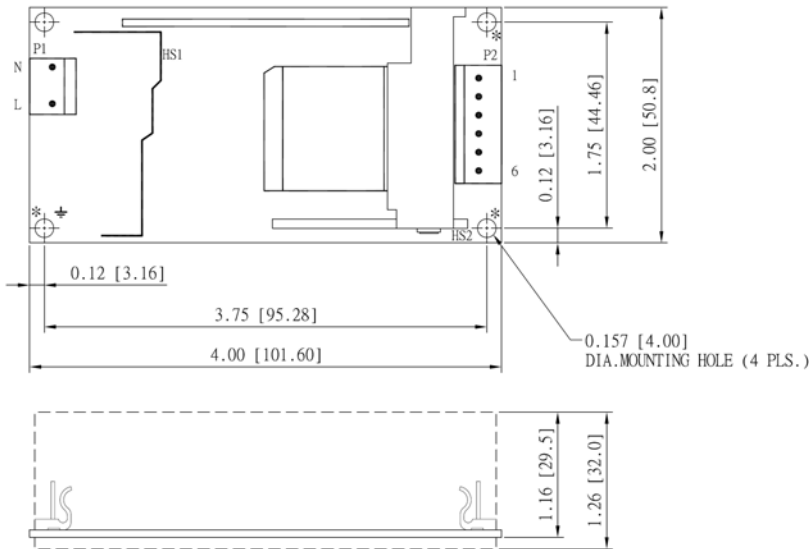
EN55011 /EN55022:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ±2 KV
EN61000-4-5:	Surge, ±1 KV diff., ±2 KV com.
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 3 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms (criteria A @ 230 VAC, criteria B @ 100 VAC), 60% reduction for 100 ms (criteria B), >95% reduction for 10 ms (Criteria A)

OUTPUT VOLTAGE/CURRENT RATING CHART

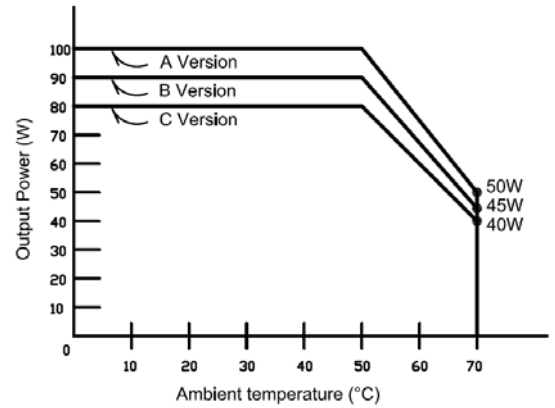
Model ⁽¹⁾	Output						Average Active Efficiency (typical) @ 115/230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise ⁽²⁾	Max. Power	
PM100-10A	5 V	0 A	20.00 A	±2 %	150 mV	100 W	85/88%
PM100-12A	12 V	0 A	8.34 A	±2 %	120 mV	100 W	86/89%
PM100-13A	15 V	0 A	6.70 A	±2 %	150 mV	100 W	86/89%
PM100-13-1A	18 V	0 A	5.56 A	±2 %	180 mV	100 W	86/89%
PM100-14A	24 V	0 A	4.20 A	±2 %	240 mV	100 W	87/90%
PM100-15A	28 V	0 A	3.58 A	±2 %	280 mV	100 W	87/90%
PM100-17A	36 V	0 A	2.78 A	±2 %	360 mV	100 W	87/89%
PM100-18A	48 V	0 A	2.10 A	±2 %	480 mV	100 W	87/89%

- NOTES:
- Safety approvals are for PCB form only. To order models with metallic L-bracket or box, change suffix "A" to "B" for L-bracket form, to "C" for enclosed form (see Outline Drawing of Cased Internal Switchers), e.g. PM100-14C.
 - Ripple and noise is maximum peak-to-peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 µF tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



OUTPUT POWER DERATING CURVE



NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Connector P1: Molex header 09-65-2038 or equivalent, mating with Molex housing 09-50-1031 or equivalent.
- Connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
- To ensure compliance with level B emissions, connect the three "*" marked mounting holes with metallic standoffs to chassis.
- Weight: 190 grams (0.44 lbs.) approx.

PIN CHART

MODEL	PIN			1	2	3	4	5	6
	1	2	3						
PM100-10A	PM100-13-1A	PM100-17A		V1 Return	V1 Return	V1 Return	+V1	+V1	+V1
PM100-12A	PM100-14A	PM100-18A							
PM100-13A	PM100-15A								